

DESCRIPTIONS OF NEW TRICHOPTERA.

By NATHAN BANKS.

(Plates VIII, IX.)

The following pages contain descriptions of thirty new caddice-flies from the United States, a generic synopsis of the family Sericostomatidæ, and an arrangement of the species of the genus *Neuronia*. Several new genera in the Limnephilidæ are described; these will be tabulated in a future paper on the classification of this family. The whole is preliminary to a catalogue of the Neuropteroid insects of Boreal America, to be published in a short time.

***Phryganea californica*, n. sp.**

Head yellowish brown, with white hair; thorax blackish, with white hair and black bristles; a tuft of black bristles at base of fore wings; the white hair forms a broad median stripe on the thorax; abdomen brown, banded with yellowish or whitish above; legs pale yellowish, with only a very few pale yellowish spines on the tibiæ, anterior tibiæ rather infuscated at tips. Wings uniformly blackish fumose, densely clothed with long black and white hair intermixed, darkest along the basal venation; an elongate white spot on the thyridium before fork, a white dot in base of third apical cell, the cross-vein at base of the fourth apical cell, and the lower part of the arculus hyaline. Both wings very narrow and almost acute at tips, the outer edge in fore pair being straight, not convex, a distinct cross-vein between costa and subcosta near pterostigma; discal cell plainly shorter than its pedicel; first apical sector arising from about middle of cell; the apical cells long and narrow; the arculus straight. In the hind wings the discal cell is very short, not one-third the length of the second apical cell, fifth apical cell very short pedicellate; no cross-vein from radial sector to radius.

Expanse, 33 mm.

One female from California (no definite locality).

***Neuronia inornata*, n. sp. (Pl. IX, fig. 20).**

Head and thorax yellow-brown, abdomen dark brown; maxillary palpi and antennæ yellowish brown; head and thorax with gray hair; legs dull, pale yellowish; both pairs of wings soiled, whitish hyaline; faint indications of brown irrorations near veins of anal area of fore wings; pterostigma rather darkened; venation pale brownish, a dark dot in base of third apical cell. Wings rather broad, sparingly clothed

with short black hair. In fore wings the first apical sector arises before the middle of discal cell, the latter scarcely as long as its pedicel and narrowed at tip; the radius downcurved and then upcurved before the pterostigma; arculus nearly straight, not angulate at end of cubitus, but the branch from median is angulate to meet the arculus. In hind wings there is a cross-vein from discal cell to radius, and the first sector arises from the middle of this cross-vein; the discal cell is very short, the third apical cell narrowed at base. The tibiæ of legs have only a few short black spines; those on the hind tibiæ not more than one-half the diameter of the joint.

Expanse, 38 mm.

One specimen from St. Anthony Park, Minn. (Pettit).

Neuronia canadensis, n. sp.

Head black; face with erect golden hair; posterior warts rufous, bearing rufous hair; palpi pale; antennæ reddish brown; lobes of prothorax yellowish, and with long yellowish hair; thorax black, lateral lobes pale, and the scutellum rufous, with golden hair; legs yellowish, with golden hair and black spines, femora blackish on bases; abdomen black. Wings yellowish, fore pair densely irrorate with brown, a larger spot before and after pterostigma, and at ends of veins, and at arculus; venation brown; membrane finely granulate, and with sparse golden hair. Hind wings yellowish hyaline, a brown spot before pterostigma, and beyond a few brown irrorations, and dark at ends of veins. Fore wings broad, broadly rounded at tip; discal cell about three-fourths as long as pedicel; first apical cell as long on discal as width of latter, fifth not extending back as far; the arculus angulate; cross-vein from median to cubitus ends beyond forking of latter vein.

Expanse, 28 mm.

One specimen from Guelph, Ontario, Canada (Jones). Differs from nearly all others by fork 1 arising beyond middle of discal cell; from *stygipes* and *pardalis* by pale hind wings; from *lapponica* and *dossuaria* by broader, more densely irrorate wings, and curved arculus.

Genus NEURONIA Leach.

ARRANGEMENT OF SPECIES.

1. First apical sector arising at or before middle of discal cell.....2
 First apical sector arising beyond middle of discal cell.....4
2. Arculus plainly angulate at end of cubitus; wings more or less yellowish, and marmorate with brown [*ocellifera*, *semifasciata*, *postica*, and *augustipennis*].
 Arculus nearly straight3

3. Fore wings marmorate with dark brown.....*concatenata*.
Fore wings almost unicolorous.....*inornata*
4. Hind wings black on basal part; feet black.....5
Hind wings pale on basal part; feet pale.....6
5. Second subapical cell with base longer than of the third..*pardalis*
Second subapical cell with base not longer than that of the third.
stygipes.
6. Wings white, with few black band-like reticulations; arculus straight;
wings narrower*dossuaria*.
Wings yellowish, with many brown markings; arculus curved;
wings broader*canadensis*.

Anobolia montana, n. sp.

Head dark brown; antennæ paler brown, narrowly annulate with darker; palpi yellowish; thorax brown, with a jet black stripe on each side of mesothorax, narrowly bordered with white internally. Legs yellowish; tips of tarsi and tip and middle of anterior tibiæ outside blackish; spines black. Fore wings dark brown, anal field darker than elsewhere, and costal rather pale, sprinkled with many fine, pale dots, much more numerous in apical part, a larger, pale oblique mark on the thyridium, and one smaller at arculus, also some spots along the outer margin; a pale geminate spot in base of the third apical cell; pterostigma slightly darker than rest of wing. Hind wings hyaline, darker near the pterostigma, and a dot in base of third apical cell. Venation very similar to *A. bimaculata*, but the fifth apical cell is scarcely as acute at base, and the discal cell a little shorter than in that species; the hind wing is less excised below the apex than in *A. bimaculata*.

Expanse, 30 mm.

Four specimens from Franconia, Mt. Washington, N. H., and Mt. Katahdin, Maine.

Halesochila, n. gen.

Last joint of hind tarsi without spines beneath; the pterostigma thickened and very prominent; first apical cell broad at base, membrane of wing not granulate; spurs 1-3-3; mesothoracic strips short and with few bristles; fork 3 present in hind wings.

Type: Halesus taylori Banks.

This genus is near *Chilostigma*, but differs in smooth membrane of wings, and in the spur formula.

Allophylax, n. gen.

Last joint of hind tarsi without spines beneath; pterostigma not thickened nor prominent; mesothoracic strips short, not nearly one-

half the length of mesothorax; fork 3 present in hind wings; spurs 1-3-4; first apical cell reaching back on discal cell more than the width of latter; wings very broad.

Type: Stenophylax punctatissimus Walker.

Differs from *Stenophylax* in great length of the first apical cell.

***Stenophylax minusculus*, n. sp. (Pl. IX, fig. 12).**

Head black, yellowish hairs on the vertex, gray on the face; palpi blackish; antennæ brown, basal joint black; thorax and abdomen black, tip of latter brown, yellowish hair on prothorax and mesothorax; legs pale yellowish, femora black, except at extreme tips, last joint of tarsi brown, spines black. Fore wings hyaline, largely marked with brown; venation brown; apical cells mostly hyaline, subapicals mostly brown, anal area brown, costal area pale, middle area of wing brown, extending out above to the brown pterostigma, a pale spot in apex of discal cell, a longer spot in apex of thyridial and median cells; the arculus, and a dot on thyridium before fork white-hyaline; hind wings hyaline, venation pale. Fore wings rather narrow, discal cell slightly longer than its pedicel, radius bent near pterostigma, cubitus disjointed at posterior anastomosis. In the hind wings the discal cell is plainly shorter than its pedicel; the third apical cell is widened at base, and has a dark dot; the fourth is narrowed at base, and the fifth reaches quite a little before it.

Expanse, 18 mm.

One specimen from Olympia, Washington (Kincaid).

***Parachiona signata*, n. sp.**

Head and antennæ yellowish brown, palpi paler; vertex with yellowish bristles from the warts; large yellow bristles from pronotum; thorax and abdomen yellow-brown, darker on tip of latter; legs pale yellowish, spines black. Fore wings yellowish brown, darker along median vein and in anal area, paler in costal area, venation pale brownish, outer anastomosis dark brown, and margined with brown, a large hyaline spot on the thyridium, and a pale dot in base of third apical cell; hind wings hyaline, venation pale. Head rather short and transverse, no macrochaeta behind ocelli; basal joint of antennæ large and long. In the fore wings the discal cell is about equal to its pedicel, the fifth apical cell not reaching before fourth; the cubitus not disjointed at the posterior anastomosis, radius bent near pterostigma. In hind wings the discal cell is shorter than its pedicel, the fourth apical cell has an oblique base, the fifth not reaching before it.

Expanse, 27 mm.

One specimen from Idaho, July (R. W. Doane).

***Parachiona pilosa*, n. sp. (Pl. IX, fig. 13).**

Black, shining; head with black hair; antennæ dark brown; pronotum with some long golden-yellow hair, lateral lobes in front of the wings are bright yellow, and clothed with golden-yellow hair; abdomen dark brown, a stripe each side paler; legs yellow-brown, darkest on the femora; spurs 1-3-4; a few black spines on the tibiæ. Wings uniform blackish brown, clothed with black hair, a hyaline spot just before the fork of the median vein, and the arculus also hyaline; hind wings rather paler than the front pair, and with brown fringe. Both pairs of wings rather broad, and broadly rounded at the tips; discal cell of fore wings is slightly longer than its pedicel, but not nearly as long as the apical cells, all of which are of equal length, and the fifth acute at base. In the hind wings the first apical does not reach before the cell, and the fourth apical is widened at base. The mesothoracic strips are very short; and the palpi are also very short.

Expanse, 16.5 mm.

One male from Olympia, Washington State, in May (Kincaid).

***Limnephilus osleri*, n. sp. (Pl. IX, fig. 19).**

Dull yellowish, clothed with yellowish hair; spines on the legs black. Fore wings yellowish hyaline, venation pale, an elongate brown cloud in middle of basal part, each side of median vein; a small patch near apex of discal cell, a dark brown spot in thyridial area above posterior anastomosis, and containing a minute pale dot; obliquely backward from this is an irregular dark cloud, mostly between the cubital and median veins, and containing a geminate pale spot; beyond the posterior anastomosis toward the hind margin mostly brown, with many pale spots and dots; apical cells with some indistinct dark spots, most prominent at the outer margin; anal area uniformly pale brown; a dark dot in base of third apical cell. Hind wings hyaline, venation pale yellowish. Maxillary palpi of female with last joint longer than the preceding; ocelli rather small; vertex moderately flat; posterior warts not very large; basal joint of antennæ rather long; vertex with a pair of submedian bristles backward and toward middle from the ocelli; bristle-bearing strips of metathorax elongate and narrow. Fore wings long and narrow, outer margin oblique, almost concave; discal cell very long and slender, but not twice the length of the pedicel, longer than any apical cell; first and fifth apical cells reach about the same distance back of anastomosis; radius very strongly bent at pterostigma; cubitus much disjointed at the anastomosis, so that the third subapical

cell is broad at base. In hind wings the discal cell is about as long as the pedicel, and as long as any apical cell; all apicals broad at base, but the fourth rather narrower than the others; the vein from the posterior anastomosis arises much nearer to the cubitus than to the median, and then curves forward.

Expanse, 44 mm.

One female from South Park, Col., 25 May (Osler); others from Wellington, B. C., and Tabernash, Colo.

***Pycnopsyche similis*, n. sp. (Pl. IX, fig. 25).**

Head and thorax reddish yellow, palpi pale yellowish, antennæ rather reddish yellow; legs pale yellow, with black spines; abdomen pale at base, nearly black at tip; fore wings pale yellowish, outer edge broadly bordered with brown, a brown spot in base of third apical cell, containing a darker dot, another smaller in fifth apical cell, and three discal brown spots forming a discal band like that of *P. guttifer* and *Platyphylax subfasciata*, but not quite as long; a hyaline spot on the thyridium before the fork; venation pale; hind wings hyaline, venation pale. Wings shaped and veined as in *P. guttifer*. No macrochæta back of ocelli, but hairs on the vertex, thoracic strips very short and narrow, with only five or six tubercles in each; spurs 1-3-3.

Expanse, 30 mm.

Two specimens from Agricultural College and Chatham, Mich., August, September.

Very similar to *P. guttifer* (Pl. IX, fig. 22), but distinct by genitalia of male.

***Phryganomyia*, n. gen.**

A limnephilid; no spines on last joint of hind tarsi; fore wings rather slender, apical cells very long and narrow, first not reaching far on discal cell; in hind wings the discal cell is very short, and there is a cross-vein from the first apical sector near its base connecting to the radius; spurs 1-3-4; ocelli very large; no macrochæta back of the ocelli; maxillary palpi short, in the male the basal joint is as long as either of the other joints, a condition very rare in the Limnephilidæ.

Type: Asynarchus alascensis Banks.

The genus *Phryganomyia* includes also the following new species.

***Phryganomyia obscura*, n. sp. (Pl. VIII, fig. 6.).**

Head, antennæ, and palpi yellowish, vertex with yellowish hair, but no macrochæta back of the extremely large ocelli; thorax yellowish,

with whitish hair; abdomen dark brown, appendages pale yellowish; legs pale yellow, with yellowish spines and spurs. Fore wings dull yellowish hyaline, venation pale brown; faint traces of brown irroration on hind part of the wings; hind wings yellowish hyaline, venation pale. Fore wings rather slender, discal cell plainly shorter than pedicel, not nearly as long as the apical cells, first and second apicals both with oblique bases, fifth scarcely reaching before the fourth, cubitus disjointed at posterior anastomosis. In hind wings the discal cell is very short, only about one-third the length of its pedicel, apical cells very long, fifth reaching only a little before fourth.

Expanse, 22 mm.

One specimen from Tupper Lake, Minn. (Pettit).

Ecclisomyia, n. gen.

A limnephilid; no spines on last joint of hind tarsi; spurs 1-2-4; fore wings rather long, the discal cell is very long, and the first apical cell is more than twice the width of discal cell upon the latter; the outer margin is rounded; in the hind wings the fourth apical cell is not narrowed at base. Ocelli large, no macrochæta behind them; the basal joint of antennæ rather longer than usual.

Type: E. conspersa, n. sp.

Ecclisomyia conspersa, n. sp. (Pl. IX, fig. 14).

Head reddish yellow, vertex with a triangular black spot enclosing the ocelli, no hairs on the vertex, but black bristles from the warts; antennæ and palpi yellowish; thorax reddish brown, darker on each side; abdomen yellow-brown, darker toward tip above; legs pale yellowish, spines black. Wings pale brown, with scattered, whitish hyaline dots, a larger one on the arculus; the hyaline spot in the third apical cell and that just below the thyridium are geminate with a brown dot; membrane with short black hairs, venation pale brown; hind wings hyaline, venation pale. In the fore wing the discal cell is three times as long as its pedicel, yet barely as long as the third apical cell.

Expanse, 27 mm.

One specimen from Olympia, Wash. Differs from *E. maculosa* in larger size, absence of pale spot on thyridium, larger spot on arculus, etc.

Ecclisomyia maculosa, n. sp. (Pl. IX, fig. 18).

Head reddish yellow, vertex blackish in middle; antennæ and palpi pale yellow, all with yellowish hair; legs pale yellowish, spines black; abdomen brown. Fore wings nearly uniform brownish, with some scat-

tered, rather large hyaline spots, most numerous in apical part; venation very pale. Hind wings hyaline. Head rather more transverse than usual, vertex convex; ocelli large, nearer to median line than to eyes; posterior warts small; antennæ almost crenulate beneath, basal joints not very long; maxillary palpi of female long, last joint a trifle longer than penultimate. Spurs 1-3-4. Costal area of fore wings rather broad; outer margin rounded; radius not bent at pterostigma; discal cell fully twice as long as pedicel, and about as long as any apical cell; first apical cell reaching back on discal nearly one half way; fifth apical but little before anastomosis, acute at base; posterior anastomosis oblique, the cubitus not disjointed at that place. In hind wings the discal cell is longer than pedicel, but not nearly as long as some of the apical cells; first apical some distance on discal cell; fifth not reaching back of anastomosis, acute at base; the second vein beyond the fifth apical cell forms an elongate, closed cell with the next vein, as in figure (so in both hind wings). Margins of wings with rather long fringe.

Expanse, 15 mm.

One female from Boulder, Colo., July 31 (Osler).

Probably related to the *Stenophylax dubius* of Europe, which has a long first apical cell in fore wings.

Notidobia assimilis, n. sp. (Pl. VIII, fig. 8).

Body black, base of abdomen beneath yellowish, appendages yellowish; legs brown, very slender; wings yellowish brown, with sparse gray vestiture, venation brown, mostly indistinct, fringes black; hair on face black, on abdomen pale, but sparse, on appendages black and long; abdomen of male long and slender. Male appendages broad, concave within, a small notch above toward base, outer edge with several long spine-like bristles; on upper inner corner is a recurved tooth within as in the two species from California described by McLachlan; the median piece is large, blunt-pointed, and the tip is seen in side-view; the tip of abdomen, both above and below, bears many long, curved hairs.

Expanse, 19 mm.

Two specimens from San Diego, Cal. (Field).

Brachycentrus similis, n. sp. (Pl. IX, fig. 21).

Head brown, white hairs above; maxillary palpi brown, with gray hairs in front; labial palpi paler; antennæ with basal joints dark brown, beyond paler brown, narrowly annulated with yellow; thorax dark, a broad pale stripe on the middle; abdomen dark brown, with yellowish and whitish hairs; legs yellowish, anterior femora blackish, others barely so. Wings smoky, darker on costal region near tip, a few faint

traces of pale spots on margin between the veins. Hind wings paler gray, with gray fringe. Venation as in the other species. The tip of male abdomen has two plates, showing from above a median emargination between them, in this differing from all our other species.

Expanse, ♂, 20 mm.; ♀, 25 mm.

A male from Tabernash, Colo., August (Tucker) and female from Boulder, Colo., August 9, at light (Cockerell).

***Lepidostoma stigma*, n. sp. (Pl. VIII, fig. 10).**

Head brown; palpi yellowish; basal joints of antennæ brown, as long as width of head, beyond yellowish, with narrow brown annuli; thorax dark brown, four warts on pronotum; coxæ dark brown, rest of legs pale yellowish, with white hair, spurs pale; abdomen dark brown above, pale beneath; wings dull brownish, with scattered black hairs; in both pairs a broad streak of dark brown over the posterior fifth of radius, extending up to subcosta and nearly reaching radial sector; venation as figured; anal margin of hind wings with long cilia.

Expanse, 18 mm.

One female from Colorado (Osler), and two from Boulder, Colo., Aug. 9 (Cockerell), at light.

***Thremma deceptiva*, n. sp. (Pl. VIII, fig. 1).**

Head brown; vertex shining; a distinct ocellus over each antenna and between bases; basal joint of antennæ yellow-brown, scarcely as long as distance from eye to eye, beyond yellowish, narrowly annulate with brown; palpi yellow, in female upturned; thorax brown; legs pale yellowish, spurs 1-3-4; abdomen large, venter and sides pale, dorsum light brown; wings nearly hyaline; venation brown, a large elongate dark spot in stigmal region of both pairs, and a minute dot in base of third apical cell.

Expanse, 15 mm.

One female from Beulah, New Mexico, 8,000 feet (Cockerell).

Differs from the type of the genus in longer wings and longer discal cell and fork 3, and in that in the hind wings fork 1 is present.

***Helicopsyche arizonensis*, n. sp.**

Head clothed with gray hair, palpi and basal joints of the antennæ with brown hair, rest of antennæ pale yellow, narrowly annulate with brown; thorax black, with some yellowish and gray hair; abdomen brown, darker above than below, legs yellowish, brownish on the basal

half of femora and apical parts of hind tibiæ, tarsi pale, faintly marked with dark at extreme tip of joints. Wings of a uniform brown, without marks, but seen to have many short golden hairs, fringe dark brown, hind wings dark gray, with a longer, blackish fringe. Fore wings rather long (longer than in *H. borealis*), hind wings much shorter, and acute at tips; the middle tibiæ have beneath a row of about twenty-five short, but stout, black spines.

Length, 8 mm.

Three examples from Nogales, Ariz. (Oslar), in July. Differs from *H. borealis* and *H. californicus* by annulate antennæ.

Family SERICOSTOMATIDÆ.

TABULAR VIEW OF THE GENERA.

1. A cross-vein connecting radius to radial sector near discal cell....2
No such cross-vein present.....4
2. The cross-vein above discal cell; five apical cells in fore wings.
Notidobia.
The cross-vein is beyond discal cell; seven apical cells in fore wings.3
3. In hind wings only one pedicellate apical cell, seventh apical broadly truncate at base; joints 2 and 3 of maxillary palpi barely longer than joint 4.....*Namamyia*.
In hind wings two pedicellate apical cells (5 and 7); maxillary palpi with joints 2 and 3 plainly longer than 4.....*Nerophilus*.
4. Discal cell in hind wings closed; basal joints of antennæ long, and densely hairy; spurs 1(2)-4-4 or 1-3-4.....5
Discal cell of hind wings open.....11
5. Ocelli present; spurs 1-3-4.....*Thremma*.
No ocelli; four spurs on middle tibiæ.....6
6. Discal cell in fore wings much longer than pedicel; a small cell on posterior margin of fore wing beyond middle; male with maxillary palpi small, erect, appressed; no scales on hind wings.
Notiopsyche.
Discal cell in fore wings not, or barely, longer than pedicel.....7
7. Discal cell about as long as pedicel; in hind wings first apical cell scarcely extends back of second; male with anal vein of fore wings running into margin, and not connected near tip to cubitus.8
Discal cell plainly shorter than pedicel; male without scales on hind wings, neither labial palpi nor tarsi 1 enlarged; the connection between median and cubitus beyond middle of wing.....9
8. Male with labial palpi and first joint of tarsus 1 much enlarged (female unknown)*Nosopus*.
Male without such parts enlarged; scales on hind wings; female

- with basal joints of antennæ very long.....*Lepidostoma*.
9. Anal vein apparently running straight into branch of cubitus, really connected to cubitus by a cross-vein sloping backward.....10
Anal vein running into margin, or in female connected to branch of cubitus by a cross-vein; male with costal margin broadly re-curved over wing*Olemira*.
10. In fore wing a longitudinal vein between anal and cubitus for some distance; four apical cells in hind wings; cubitus of fore wings with one fork; male maxillary palpi heavily hirsute, porrect.
Atomyia.
- In fore wing no such vein between anal and cubitus; three apical cells (or really two) in hind wings; cubitus of fore wings with two forks; maxillary palpi of male small, slender, upcurved and appressed*Mormomyia*, n. gen. (*Mormonia vernalis* Banks).
11. Spurs 2-2-2; forks 2 and 3 present in fore wings....*Oligoplectrum*.
Spurs 2-3-3; forks 2 and 3 present in fore wings; antennæ rather widely separated*Brachycentrus*.
Spurs 2-2-4; forks 2 and 3 absent in fore wings.....*Helicopsyche*.
Spurs 2-4-4; area interclavialis enlarged at tip.....*Goera*.

***Triænodes frontalis*, n. sp. (Pl. IX, fig. 11).**

Head black, clothed with snow-white hair, a large tuft under each antenna with some black hairs in it; palpi brown, with white hair; antennæ with snow-white hair, and brown annulations at ends of joints; thorax black, with snow-white hair; abdomen yellowish; legs yellowish, with yellowish hair. Fore wings mostly clothed with white and gray hair, some black hair, especially on apical part; a black mark on radius near stigma, one on median near cell, and one at arculus, with black fringe at this point; apical part more or less irrorate with brown or black; hind wings smoky, blackish on tips, fringe gray.

Expanse, 16 mm.

One from Ft. Collins, Colo., 20 June (Baker).

Readily separated from *T. grisea* by black head and snow-white hair.

***Setodes vernalis*, n. sp. (Pl. VIII, fig. 3).**

Pale yellowish; abdomen dull brown, except paler appendages; wings rather dusky, with the radius and cubitus dark brown; hairs on costal region golden, in apical part mostly blackish; forks 1 and 3 of equal length, the first with a pedicel rather longer than the veinlet closing the discal cell; lower branch of radial sector ending at tip of wing. Hind wings rather dusky, scarcely darker on tips, fringe long, and dark gray. Appendages of male as figured; a long, slender, curved piece each side, which, seen from above or below, meets its fellow to form a circle, their inner edges with long fine hairs.

Expanse, 11 mm.

High Island, Maryland (near Washington), 17 June; several specimens.

***Setodes autumnalis*, n. sp.** (Pl. IX, fig. 23).

Pale yellowish throughout, clothed with pale yellowish hair, wings with golden hair; abdomen rather brighter yellow at tip. Wings very slender, both pairs acute at tips, fork 1 with pedicel as long as veinlet closing discal cell, fork 3 no longer than fork 1. In hind wings the radial sector is not distinct on basal portion. Last segment of abdomen of male is very large, upturned, and has a hairy appendage near tip, narrow at base, broad and rounded above.

Expanse, 14 mm.

High Island, Maryland (near Washington) 28 September.
Readily known by pale yellow color.

***Setodes grandis*, n. sp.** (Pl. VIII, fig. 4).

Head and thorax dark brown, clothed with mostly white hair; palpi brown, with brown hair; basal joints of antennæ brown, beyond yellowish, narrowly annulate with brown at tips of joints; legs pale yellowish, first pair darker. Abdomen pale, sometimes darker on tip. Wings dusky, with sparse black hair; radius and cubitus dark brown; hind wings faintly dusky, with gray fringe. Both pairs are long, and acute at tips; fork 3 much longer than fork 1, the latter very short pedicellate; lower branch of radial sector ending slightly before tip of wing.

Expanse, 16 mm.

Three from New Haven, Conn., 23 June (Viereck); also from Falls Church, Va.

***Ceetina inornata*, n. sp.**

Yellowish, clothed with yellow hair; palpi with more gray hair; antennæ narrowly annulate with dark; abdomen and legs entirely pale yellowish. Wings hyaline, densely clothed with golden, and some blackish hair, apical fringe rather long, and brown; anastomoses not marked, the posterior one very oblique; hind wings more hyaline, with sparse blackish hair, and long dark fringe. Maxillary palpi rather heavy, and densely haired. Fore wings with both forks not extending back of discal cell; in hind wings the second fork has a pedicel nearly its length, and the first fork extends only a short distance back on the discal cell.

Expanse, 18 mm.

Douglas, Ariz., August (Snow).

***Æcetina apicalis*, n. sp. (Pl. VIII, fig. 2).**

Yellowish, clothed with yellowish hair; palpi with darker hair; antennæ annulate with black; abdomen pale above, almost black beneath; legs pale yellowish. Wings very sparsely clothed with very fine black and yellow hairs; the anastomoses broadly margined with black, the posterior one running obliquely backward; membrane toward apex is blackish; hind wings more hyaline, with a long black fringe on posterior margin, especially heavy near base. Maxillary palpi heavy, and densely haired. Fore wings nearly acute at apex, both forks barely reaching back of the anastomosis; in hind wings the second fork starts from the discal cell, the first extending back a considerable distance on the cell.

Expanse, 18 mm.

One specimen from Brownsville, Tex., June (Snow).

***Æcetina persimilis*, n. sp.**

In appearance this species is very like unto *Æ. incerta* and *Æ. parvula*, and about intermediate in size, or as large as a small *Æ. incerta*. The wings are clothed with long gray hairs, and the anastomosis is dark brown. It belongs, however, to the other section of the genus; having in the hind wings the cross-vein connecting fork 1 to fork 3; so it is more allied to *Æ. fumosa*. It differs, however, from that species in smaller size, lack of patches of black hair on the wings, and in that the cross-vein closing the discal cell is as long as the next cross-vein beyond it (plainly shorter in *Æ. fumosa*).

Specimens from High Island, Maryland, and from Glen-carlyn, Va., in June.

The genus *Æcetina* differs from the European *Æcetis* (type *ochracea*) in having much narrower hind wings, and in that the cross-vein at end of discal cell of fore-wing is considerably beyond the other cross-veins. The European *Æ. lacustris*, and probably other species, belongs to *Æcetina*. The species of *Æcetina* may be arranged in two sections, according to position of the cross-vein in the hind wings. In one section the cross-vein connects forks 1 and 3, while in the second section the cross-vein ends in the median before the origin of fork 3. The first section includes *Æ. fumosa*, *avara*, *apicalis*, and *persimilis*; the second section contains *incerta*, *flavida*, *guttata*, *floridana*, *ornata*, *parvula*, and *flaveolata*.

***Setodina*, n. gen.**

A leptocerid near *Setodes*, but the last joint of the maxillary palpi is short, although a little curved; the spurs are 0-2-2; forks 1 and 3

are present in the fore wings, 1 and 5 in the hind wings; there is no cross-vein in the hind wings; antennæ much longer than the body, basal joint very large. Based on a tiny insect, no larger than a good-sized hydroptilid, which differs from all other Leptoceridæ in the greatly reduced venation of the hind wings.

Type: The following species.

Setodina parva, n. sp. (Pl. IX, figs. 24, 26).

A uniform dull pale gray; legs and antennæ more yellowish; wings clothed with gray hairs. Fore wings quite slender; the radius and subcosta close together; the discal cell longer than second apical cell; the cross-veins are very faint, but can be seen against a strong light; hind wings with a long fringe behind, no cross-veins present; in the basal part of third apical cell of the fore wings there is a small dark dot.

Expanse, 5.5 mm.

Three specimens from Kissimmee, Fla., in November.

Hydropsyche minuscula n. sp. (Pl. VIII, fig. 5).

Dull black, head and thorax clothed with yellowish gray hair, almost golden on vertex, with some black hair each side; antennæ pale, annulate with dark; abdomen blackish above, yellowish below; legs yellowish, with yellow spurs, some longer black hair on hind tibiæ. Wings clothed with black and yellowish hair, giving them a uniform grayish or brownish appearance, devoid of markings, except sometimes a little more heavily marked with black on the middle of the hind margin, and sometimes a faint yellowish mark near outer anal angle; fringe blackish, or broken with yellow near outer anal angle; hind wings gray, with gray fringe. Eyes of male widely separated; antennæ rather heavy; fore wings broadly rounded at tips, fork 1 reaching more than one-half way to discal cell; in hind wings fork 1 is absent, and the tip is slightly upturned.

Length, 6 mm.

Several specimens from Plummers Island, Maryland, in August.

It falls in Ulmer's genus *Hydropsychodes*, which differs from *Hydropsyche* only in lacking fork 1 to hind wings; *H. analis*, *H. sordida*, *H. gracilis*, and *H. divisa* will also go in this genus, if it be adopted.

Phylocentropus, n. gen.

An hydropsychid near *Holocentropus*; venation as in that genus except that fork 1 in both wings arises from the discal cell; in this

respect like *Wormaldia*. Forks 1, 2, 3, 4, 5 in fore wings; 1, 2, 3, and 5 in hind wings. Fore wings with distinct costal cross-vein; discal cell closed in both pairs of wings; spurs 3-4-4; tibia and metatarsi of middle legs dilated in female; no ocelli.

Type: Holocentropus placidus Banks.

The genus also includes *Polycentropus lucidus* Hagen.

Nyctiophylax Brauer.

This genus includes *Polycentropus vestitus* Hagen and *P. affinis* Banks; and it is probable that *Cyrnus pallidus* Banks and *C. fraternus* Banks also belong here; they have the superior branch of radial sector present in hind wings, but the closure of the discal cell is extremely indistinct, if always really present.

Plectrocnemia australis, n. sp. (Pl. IX, fig. 17).

Face below antennæ deep black, with black hair; palpi black; head above antennæ with much golden hair, but a tuft of long, black hair above each eye; antennæ yellow, faintly annulate with pale brown; thorax with a stripe of yellow hairs in the middle, and black hair on each lateral lobe; abdomen brown; legs rather brownish yellow. Wings brown, thickly spotted with yellow, median vein and anal region darker brown than elsewhere, a patch of longer black hair near base of fore wings, and several black marks along the costa. Hind wings grayish hyaline, darker near tips on costal part. Venation like *P. conspersa*, but fork 1 is not nearly as long as its pedicel; fork 5 is wide-spread at base. The legs are long and slender; on middle tibiæ the submedian spurs are as far from base as the longer spur of the pair; on hind tibiæ the submedian spurs reach scarcely more than one half way to tip; and the apical spurs are hardly one half the length of the first tarsal joint. The tip of female abdomen ends in a slender upcurved ovipositor, widened at tip.

Expanse, 21 mm.

From Jacksonville, Fla. (Mrs. Slosson).

Psychomyia mœsta, n. sp. (Pl. VIII, fig. 9; Pl. IX, fig. 15).

Head and thorax black; vertex with white hair, and some white hair near the tubercled pits on mesonotum; antennæ pale yellowish; palpi brown, with black hair; legs pale yellowish, with large, long spurs, 2, 4, 4, no trace of another on front tibiæ; all legs with many fine yellowish hairs; abdomen brown, appendages yellowish; wings dull brownish, without mark, densely black-haired, but these hairs most prominent along anal field where they are nearly distinct enough to

form a stripe. Fore wings veined as in *Psychomyia*, fork 1 not present; hind wings more excavate on apical half of front margin than any figured species, and fork 3 is not present, thus like *Ecnomus*; fringe on hind edge of hind wings about as long as width of wing; middle tibiae and metatarsi plainly dilated in female.

Expanse, 11 mm.

One female from Colorado (No. 2133), probably Ft. Collins or Denver.

***Rhyacophila torva* Hagen (Pl. IX, fig. 16).**

In the Eastern States there are at least three allied species. I identify as *R. torva* a form with more spotted wings than the others. It has the lower branch of the median vein in fore wings forked before the middle, so that the fork is longer than its pedicel; this fork is not as near base as the fork of the upper branch of the radial sector. The male genitalia show a forked process each side below.

I have specimens from Sherbrooke; Canada; Franconia, N. H., and Sea Cliff, N. Y.

***Rhyacophila terminata*, n. sp. (Pl. VIII, fig. 7).**

In this species the lower branch of the median vein in fore wings is forked much beyond the middle, so that the fork is much shorter than its pedicel, and no longer than the fork of the upper branch. The wings are not very dark, rather sparingly flecked with yellow, and the basal joint of the antennæ is much darker than the others. The male genitalia show a pair of very long appendages below.

From Delaware Water Gap, New Jersey. Two females from Ithaca, N. Y. agree in venational characters, but are in poor condition.

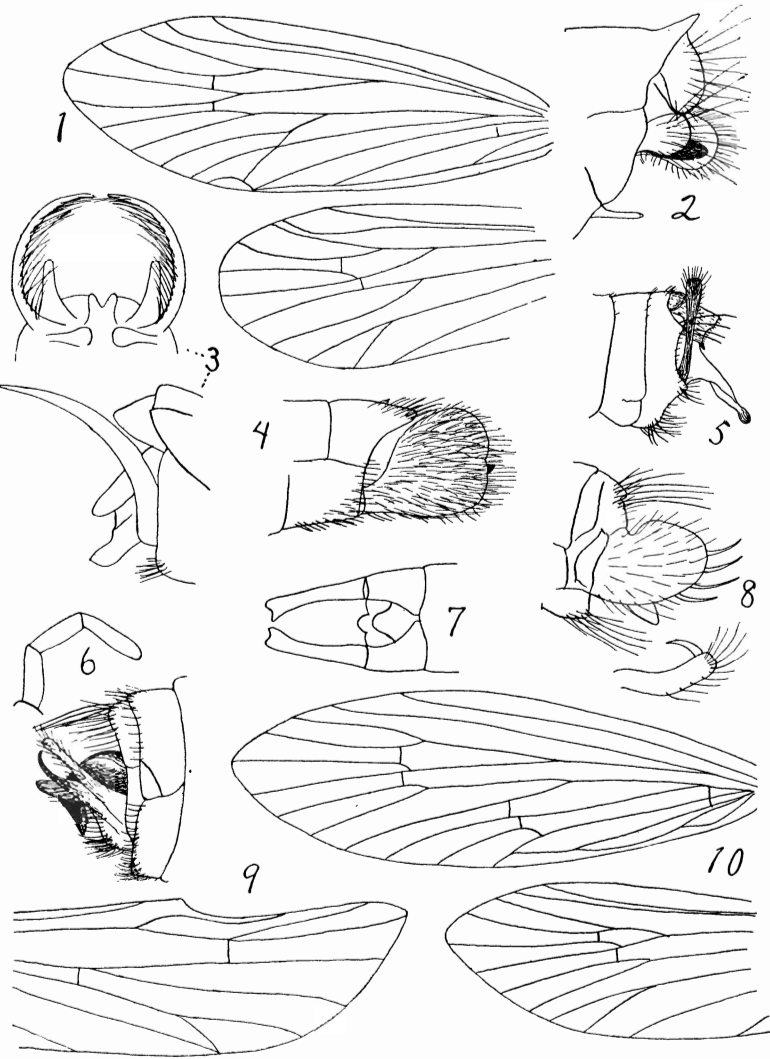
***Rhyacophila nigrita*, n. sp.**

Much like *R. torva*; with the fork of lower branch of the median vein before the middle, so that the fork is longer than the pedicel; this fork is as near to the base of wing as the fork of upper branch of the radial sector. Wings a deeper black than in *R. torva*.

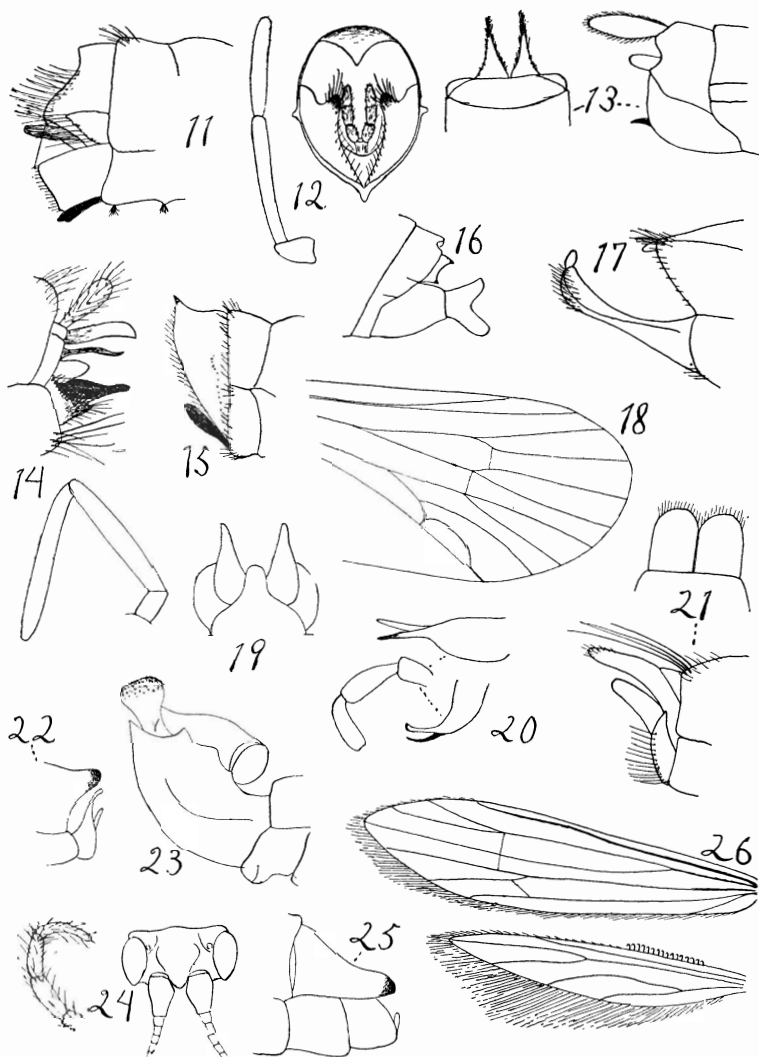
Two specimens from the Black Mts., North Carolina, June.

EXPLANATION OF PLATES.

- FIG. 1. *Thremma deceptiva*: wings.
2. *Æcetina apicalis*: male genitalia.
3. *Setodes vernalis*: male genitalia.



NEW TRICHOPTERA.



NEW TRICHOPTERA.

4. *Setodes grandis*: male genitalia.
5. *Hydropsyche minuscula*: male genitalia.
6. *Phryganomyia obscura*: male genitalia and palp.
7. *Rhyacophila terminata*: male genitalia.
8. *Notidobia assimilis*: male genitalia.
9. *Psychomyia mæsta*: hind wings.
10. *Lepidostoma stigma*: wings.
11. *Trienodes frontalis*: male genitalia.
12. *Stenophylax minusculus*: male genitalia and palp.
13. *Parachiona pilosa*: male genitalia.
14. *Ecclisomyia conspersa*: male genitalia and palp.
15. *Psychomyia mæsta*: female genitalia.
16. *Rhyacophila torva*: male genitalia.
17. *Plectrocnemia australis*: female genitalia.
18. *Ecclisomyia maculosa*: hind wing.
19. *Limnephilus oslari*: female genitalia.
20. *Neuronia inornata*: palp and claspers.
21. *Brachycentrus similis*: male genitalia.
22. *Pycnopsyche guttifer*: male genitalia.
23. *Setodes autumnalis*: male genitalia.
24. *Setodina parva*: head and palp.
25. *Pycnopsyche similis*: male genitalia.
26. *Setodina parva*: wings.

—The following papers were presented for publication.

NOTES ON UNITED STATES ORTHOPTERA, WITH THE DESCRIPTION OF ONE NEW SPECIES.

By A. N. CAUDELL.

In June, 1905, Dr. J. Hornung, of Menlo Park, Cal. sent to the National Museum several specimens of a large black earwig for determination. These proved to be *Chelisoches morio* Fab., an insect hitherto unknown from the United States.^a Correspondence with the collector elicited the information that they were taken some miles from Menlo Park in peach trees. They are probably importations from the Hawaiian Islands, where the species is common.

On May 18, 1906, Mr. Douglas Clemons found a single specimen of the small cockroach *Holocompsa nitidulus* Fab., in Washington, D. C. It was crawling on cotton batting from

^a In 1900 (Ann. Soc. Ent. Belg., XLIV, p. 51) Burr records it as questionably occurring in North America.